

Minutes of Radiation Safety Committee of March 9, 2004

Review of Linac- BLIP Y Soil Cap

Present: L. Ahrens, I.H. Chiang, A. Etkin, W. Glenn, A. Javidfar, R. Karol, E. Lessard, W. MacKay, D. Paquette, C. Pearson, M. VanEssendelft, K. Yip

The Committee met to review the proposed Linac-BLIP Y area soil cap. This cap is to be installed to ensure that rainwater leachate radionuclide concentration does not exceed the BNL limit of 5% of the drinking water standard (DWS).

K. Yip presented his calculation that was used to specify the cap dimensions. The calculation determined the relative shape of the soil activation values outside the Linac tunnel walls in the transverse and axial directions from the assumed beam loss point, the BLIP Y chamber. This computed relative shape was then fixed to an actual soil concentration at a known location downstream of the loss point. The result showed that the cap needed to be 75 cm in the transverse direction from the tunnel wall, 1100 cm in the downstream direction and 400 cm in the upstream direction from the loss point.

A. Javidfar reviewed the proposed cap dimensions and noted that they satisfied the dimensions specified by K. Yip. The proposed cap joins with the existing BLIP cap in the downstream direction to provide a continuous cap. Another side of the cap will be sealed to Building 930. The cap is to be a concrete cap reinforced with wire mesh and covered with a flexible fabric. Additional fabric covers will need to be added every 5 to 10 years to maintain the cap integrity.

E. Lessard noted that the source term used in K. Yip's calculation was acceptable since the soil sample was taken from soil that has been exposed to beam loss over the history of the Linac-BLIP operations and that future operations are not expected to significantly change. R. Karol noted that the loss point location was confirmed by actual radiation surveys of the beam line.

C. Pearson noted that the BLIP cap inspections are the responsibility of the BNL Medical Department, not C-AD. D. Paquette noted that Plant Engineering does these inspections and maintains the cap for the Medical Department.

After a discussion of the beam losses in the Linac area, the Committee requested that J. Alessi investigate the current use and sensitivity of the Linac loss monitors at the high energy end of the Linac and consider possible improvements and operator responses to reduce beam losses and to keep soil activation as low as possible.

The Committee concluded that the proposed BLIP Y cap meets the requirements to ensure that rainwater leachate is maintained less than 5% of the DWS for existing and anticipated operations.

The following Checklist Items will be tracked:

(Ck-linac-fy2005-358) The as built drawing of the Linac-BLIP Y cap will be reviewed to ensure that it satisfies the design that was reviewed.

(Ck-linac-fy2005-359) The procedure for cap inspections has been updated to include the BLIP Y cap.

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